

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) Analysis apparatus for analyzing[[the]] skin, the apparatus comprising:

a coupling member configured to contact a region of skin;

an ultrasound probe having a probe surface, wherein the ultrasound probe is configured ~~arranged to analyze the~~ receive data associated with the region of skin along an axis; and

a vibrator including an annular piece defining a contact surface and a central bore, the vibrator ~~arranged configured to emit at least one shear wave to the region of skin, from a~~ via the contact surface of the apparatus in contact with the coupling member ~~region of the skin extending around the axis, at least one shear wave to the region of the skin,~~

wherein the ultrasound probe is ~~arranged~~ configured to detect a displacement induced in the region of skin by propagation of the shear wave, and

wherein the ultrasound probe extends through the central bore such that the probe surface contacts the coupling member.

2. (Cancelled)

3. (Currently amended) Apparatus according to claim [[2]]_1, wherein a thickness of the coupling member is configured to enable[[s]] the focusing of ultrasound waves ~~to be focused~~ in a given predefined region of maximum depth below a surface of the region of skin.

4. (Currently amended) Apparatus according to claim 3, wherein the depth of said predefined region is less than or equal to 4 mm.

5. (Original) Apparatus according to claim 1, wherein a focal length of the ultrasound probe lies in the range 10.4 mm to 15.6 mm.
6. (Currently amended) Apparatus according to claim 1[[2]], wherein a thickness of the coupling member lies in the range 10.6 mm to 14.4 mm.
7. (Currently amended) Apparatus according to claim 1[[2]], wherein the coupling member ~~is in the form of~~ comprises a disk of viscoelastic material.
8. (Currently amended) Apparatus according to claim 7, wherein the coupling member is configured to be held against a surface of the skin by a holding ring provided with an inwardly-directed rim against which a face of the coupling member remote from the skin can bear.
9. (Currently amended) Apparatus according to claim 8, including a frame to which the vibrator and the ultrasound probe are secured, wherein the frame enables the apparatus to be positioned so that the axis is substantially perpendicular to a surface of the region of skin~~a surface of the skin~~.
10. (Cancelled)
11. (Currently amended) Apparatus according to claim 1[[10]], wherein the contact surface presents symmetry about the axis.
12. (Currently amended) Apparatus according to claim 1[[10]], wherein the contact surface presents circular symmetry about the axis.
13. (Currently amended) Apparatus according to claim 1, wherein the ultrasound probe is arranged to emit and receive ultrasound waves at a frequency lying in the range of 1 MHz to 300 MHz.

14. (Currently amended) Apparatus according to claim 1, wherein the ultrasound probe is arranged to emit and receive ultrasound waves at a frequency lying in the range of 30 MHz to 70 MHz.

15. (Currently amended) Apparatus according to claim 1, wherein the ultrasound probe is arranged to emit and receive ultrasound waves at a frequency of 50 MHz.

16. (Currently amended) Apparatus according to claim 1, including a generator arranged to deliver a low-frequency signal to the vibrator during ~~the entire~~ an analysis period, the signal having a frequency lying in the range of 100 Hz to 500 Hz.

17. (Currently amended) Apparatus according to claim 1, including a generator arranged to deliver a low-frequency signal to the vibrator during ~~the entire~~ an analysis period, the signal having a frequency of about 300 Hz.

18. (Currently amended) Apparatus according to claim 1, including a processor device ~~arranged~~ configured ~~to deliver at least one piece of~~ receive information from ~~signals picked up by~~ the ultrasound probe, wherein the information represents a mechanical property and/or a thickness of at least one layer of the skin.

19. (Currently amended) Apparatus according to claim 18, wherein the processor device is ~~arranged~~ configured to deliver state information relating to a state of the skin, by comparing a measured value with a reference value.

20. (Currently amended) Apparatus according to claim 19, wherein the state information is indicative of an age associated with the skin ~~said state of the skin is its degree of aging.~~

21. (Currently amended) Apparatus according to claim 18, wherein the processor

device is ~~arranged~~ configured to store the ~~signals picked up by~~ information received from the ultrasound probe at various successive time points.

22. (Currently amended) Apparatus according to claim 18, wherein the processor device is ~~arranged~~ configured to store the information received from ~~signals picked up by the ultrasound probe all n~~ for each sample during a predefined time interval $[[s \text{ dt}]], [[n]]$ the number of samples lying in the range of 50 to 500.

23. (Currently amended) Apparatus according to claim 22, wherein $[[dt]]$ the predefined time interval lies in the range of 2.2 ms to 0.8 ms.

24. (Currently amended) Apparatus according to claim 1, wherein the probe and the vibrator are ~~arranged~~ configured so that ~~the displacement of~~ motion of the vibrator for generating the shear wave is not transmitted to the ultrasound probe.

25. (Currently amended) A skin analysis method, comprising:

applying an apparatus to a region of skin associated with a patient, the apparatus comprising:

a coupling member configured to contact a region of skin;

an ultrasound probe having a probe surface, wherein the ultrasound probe is configured to receive data associated with the region of skin along an axis; and

a vibrator including an annular piece defining a contact surface and a central bore, the vibrator configured to emit at least one shear wave to the region of skin via the contact surface in contact with the coupling member

wherein the ultrasound probe is configured to detect a displacement induced in the region of skin by propagation of the shear wave, and

wherein the ultrasound probe extends through the central bore such that the probe surface contacts the coupling member; receiving data associated with the region of skin; and

~~storing the data~~analyzing skin by means of the apparatus according to claim 1.

26. (Currently amended) A method according to claim 25, further comprising ~~the step of processing signals~~ the data coming from the ultrasound probe so as to determine at least one value relating to a mechanical property of the region of skin.

27. (Original) A method according to claim 26, wherein said mechanical property is selected from the group consisting of its Young's modulus, its shear modulus, and the propagation speed of the shear wave.

28. (Original) A method according to claim 26, wherein the phase lag of the shear wave is calculated as a function of the depth.

29. (Currently amended) A method according to claim 26, wherein a state of the region of skin is determined by comparing a value for Young's modulus resulting from analyzing the region of skin with reference values.

30. (Currently amended) A method according to claim 29, wherein the determined ~~[[said]]~~ state of the region of skin is indicative of a degree of aging of the skin.

31. (Original) A method of evaluating a mechanical property of a region of the skin, the method comprising:

analyzing said region with the apparatus according to claim 1; and

delivering, from the results of the analysis, information relating to said mechanical property.

32. (Currently amended) A method of determining ~~[[the]]~~ an effectiveness of treatment that ~~has action~~ affects ~~[[on]]~~ a mechanical property of skin, the method comprising:

performing a first evaluation of said mechanical property;

performing the treatment on the skin; and
after the treatment, performing a second evaluation of said mechanical property, at least one of the first and second evaluations including the steps of
analyzing the skin by means of the apparatus according to claim 1, and
processing signals coming from the ultrasound probe so as to determine at least one value relating to the mechanical property of the skin.

33. (Currently amended) A method of treating a region of a human body, the method comprising:

analyzing skin by means of the apparatus according to claim 1;
processing signals coming from the ultrasound probe so as to determine at least one value relating to a mechanical property of the skin; and
performing treatment that ~~has action~~ affects ~~[[on]]~~ said property based on an evaluation of the at least one value.

34. (Currently amended) The method of claim 32, further including demonstrating activity or effectiveness of a product ~~as revealed~~ based on ~~[[by]]~~ the second evaluation.

35. (New) Analysis apparatus for analyzing skin, the apparatus comprising:
a coupling member configured to contact a region of skin;
an ultrasound probe having a probe surface in contact with the coupling member, wherein the ultrasound probe is configured to receive data associated with the region of skin along an axis; and
a vibrator configured to emit at least one shear wave to the region of skin via a contact surface of the analysis apparatus, the contact surface being distinct from the probe surface, and in contact with the coupling member,
wherein the ultrasound probe is configured to detect a displacement induced in the region of skin by propagation of the shear wave,

wherein the contact surface and the probe surface are substantially co-planar.